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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,045	04/03/2001	David Noy	27/186	9285

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DR. MARK FRIEDMAN LTD.
C/O BILL POLKINGHORN - DISCOVERY DISPATCH
9003 FLORIN WAY
UPPER MALBORO, MD 20772

EXAMINER

VU, KIEU D

ART UNIT	PAPER NUMBER
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2173

DATE MAILED: 05/27/2004

10

Please find below and/or attached an Office communication concerning this application or proceeding.

1/2

Office Action Summary	Application No. 09/824,045	Applicant(s) NOY ET AL.	
	Examiner Kieu D Vu	Art Unit 2173	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 23 February 2004.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-88 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) 1-24 and 81-88 is/are allowed.

6) ☒ Claim(s) 25-31, 34-43, 46-55, 58-67, 70-80 is/are rejected.

7) ☒ Claim(s) 32, 33, 44, 45, 56, 57, 68 and 69 is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____. 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6) <input type="checkbox"/> Other: _____.
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DETAILED ACTION

1. Remarks: In the Amendment filed 02/23/04:

On pages 35-36, claims 87-88 are marked as Original. It is understood that this is a typographical error. It is understood that Applicant meant to mark claims 87- 88 as new claims since on page 38, Applicant mentioned that new claims 73-88 were added.

On page 42, sentence "New claim 84 is claim 35 rewritten in independent form" is understood to contain a typo error. It is understood that what Applicant meant is "New claim 84 is claim 45 rewritten in independent form".

Claim Objections

2. Claim 50-60, 62-72, 75-76, and 79-80 are objected to because they contain typographical errors. The word "method" on these claims should be changed to "system".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 25, 34-37, 46-49, 58-61, and 70-80 are rejected under 35 U.S.C. 102(e) as being anticipated by Tahara et al ("Tahara", USP 6362842).

Regarding claims 25, 37, 49, and 61, Tahara teaches a method of human-computer interaction, comprising the steps of intending by a user to select a user targeted object (predicting a target icon or window; col 6, lines 35-38) from a plurality of at least two objects (plurality of objects in Fig. 5 or Fig. 12) in an object domain displayed by a computer executing a computer application including a pointing mechanism featuring a pointer dynamically moveable (user is moving a pointer (col 6, lines 60-64) throughout said object domain (col 4, lines 1-5); moving by said user said pointer towards said user targeted object (col 2, lines 38-42; detect the operation which the user effects on the pointing device; col 6, lines 66-67); implicitly resolving by said computer pointing ambiguities associated with said user targeted object and at least one other said object (decide which object is targeted; col 9, lines 12-14) by implicitly analyzing user movements (speed or direction determination; col 7, line 23) of said pointer towards said user targeted object located in said object domain (col 2, lines 12-14) and predicting (by using target determination part, col 9, lines 1-38) said user targeted object (line 65 of col 1, to line 2 of col 2) whereby said implicitly analyzing and predicting are performed by using at least one category of heuristic measures selected from the group consisting of implicit user pointing gesture measures (col 2, lines 12-14) (measure the speed or direction of moved pointer) and application context measures (col 10, lines 10-15).

Regarding claims 34, 46, 58, and 70, Tahara teaches said category of implicit user pointing gesture measures includes particular types of exact pointer position

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heuristic measures selected from the group consisting of distance of said pointer from center of said user targeted object and direction of said moving by said user said pointer towards said user targeted object (col 9, lines 8-14).

Regarding claims 35-36, 47-48, 59-60, and 71-72, Tahara teaches that said category of application context measures is based on context, of said selecting said user targeted object by said user, including any information external to said selecting and relevant to understanding said selecting said user targeted object (col 10, lines 10-15).

Regarding claims 73-76, Tahara teaches that said pointing ambiguities include an overlapping object ambiguity (superposition; col 14, lines 24-33).

Regarding claims 77-80, Tahara teaches that said pointing ambiguities include a composite object ambiguity (icons correlated different functions for different areas; col 14, lines 13-14).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 26-29, 31, 38-41, 43, 50-53, 55, 62-65, and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tahara and Schmidt et al ("Schmidt", "Motor-Output Variability: A Theory for the Accuracy of Rapid Motor Act")

Regarding claims 26, 38, 50, and 62, Tahara does not teach the speed-accuracy tradeoff heuristic measures. However, such feature is known in the art as taught by Schmidt. Schmidt teaches a theory for accuracy of rapid motor act which comprises the teaching of speed-accuracy tradeoff heuristic measures to focus on error detection and correction (Page 415). It would have been obvious to one of ordinary skill in the art, having the teaching of Tahara and Schmidt before him at the time the invention was made, to modify the predicting method taught by Tahara to apply speed-accuracy tradeoff heuristic measures taught by Schmidt with the motivation being to enable the system to focus on error detection and correction.

Regarding claims 27, 39, 51, and 63, Schmidt teaches total movement time (TMT) (movement time MT on page 415).

Regarding claims 28-29, 31, 40-41, 43, 52-53, 55, 64-65, and 67, Schmidt teaches said category of implicit user pointing gesture measures includes total movement time (TMT) heuristic measures based on applying Fitts' Law for determining a total movement time parameter, TMT, for performing a given task as a function of a size, W , of said user targeted object and a distance, A , of said user targeted object from a pre-determined reference point, where said Fitts' Law is described by a formula, said $TMT = a + b * \log [(2 * A) / W]$, where said a and said b are empirically determined Fitts' Law parameters, said asterisk symbol, $*$, is a multiplication operator, and said factor $\log [(2 * A) / W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units (page 415).

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7. Claims 30, 42, 54, and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tahara and MacKenzie ("Movement time prediction in Human-Computer Interfaces")

Regarding claims 30, 42, 54, and 66, Tahara does not teach the formula $TMT = a + b * \log [(A/W) + 1]$. However, such feature is known in the art as taught by MacKenzie. MacKenzie teaches Shannon formulation of Fitt's Law wherein $TMT = a + b * \log [(A/W) + 1]$ (see page 6). It would have been obvious to one of ordinary skill in the art, having the teaching of Tahara and MacKenzie before him at the time the invention was made, to modify the predicting method taught by Tahara to the formula $TMT = a + b * \log [(A/W) + 1]$ taught by MacKenzie with the motivation being to enable the system to accurately predict movement time.

Allowable Subject Matter

8. Claims 1-24 and 81-88 are allowed.

Claims 32-33 and 44-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 56-57 and 68-69 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form to overcome the objection set forth above and to include all of the limitations of the base claim and any intervening claims.

9. See Paper # 7 for Reason for Allowance.

10. Applicant's arguments filed 02/23/04 have been fully considered but they are not persuasive.

In response to Applicant's argument "The crucial difference between the present invention and the teaching of Tahara et al. '842 is that Tahara et al. '842 have no pointing ambiguities to resolve....the objects and windows addressed by Tahara et al. '842 do not overlap", it is noted that Tahara do teach pointing ambiguities since at first, the system does not know which object the pointer is pointing to (i.e. pointing ambiguity), so the system has to measure the speed and/or direction of the pointer to decide which object is the targeted object (col 2, lines 59-67). Tahara does teach overlapping objects (superposition; col 14, lines 24-33). The argument lists other features in lines 2-5 of page 11 of the present application (inaccurate pointing....eye-movement interfaces), however, these features are not presented in the claims.

In response to Applicant's argument that "there is no need to determine implicitly where the user is pointing...", it is noted that the determination is implicit since it is based on assumption. For example, the system predicts (i.e. assumes) that an icon existing in the direction of the movement of the pointer is the target icon (col 2, lines 59-65).

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kieu D. Vu whose telephone number is (703-605-1232). The examiner can normally be reached on Mon - Thu from 7:00AM to 3:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cabeca, can be reached on (703- 308-3116).

The fax phone numbers for the organization where this application or proceeding is assigned are as follows:

(703)-872-9306

and / or:

(703)-746-5639 (use this FAX #, only after approval by Examiner, for "INFORMAL" or "DRAFT" communication. Examiners may request that a formal paper / amendment be faxed directly to them on occasions)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703-305-3900).

Kieu D. Vu

05/24/04


JOHN CABECA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2173